Co-funded by the
Erasmus+ Programme
of the European Union

Project: 617695-EPP-1-2020-1-ES-EPPKA2-CBHE-JP

INTERNAL EVALUATION REPORT

YEAR 2021

Revision	Date	Author(s)	Status	Access
V0.1	2022-02-15	Carlos Machado	Draft	Restricted to consortium members
V0.2	2022-03-15	Ani Hakovian Erkin Borobaev	Revision	Restricted to consortium members

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Executive Summary

Introduction

GEOTAK is an Erasmus+ CBHE project designed to to develop postgraduate Higher Education programmes in Geoinformation Technologies (GIT) and strengthening the links in research and innovation between Higher Education Institutions (HEI), industry and administration in Armenia and Kyrgyzstan.

The specific objectives of the project are:
- To identify research and development needs of Kyrgyzstan and Armenia in the field of Geoinformation Technologies
- To create a Research Node in GIT per partner country to promote and harmonise collaborative innovation projects and joint research lines
- To improve and/or update research laboratories of GIT
- To train trainers from partner countries in relevant topics of GIT that have special interest for regional development of innovation and environmental protection
- To provide teachers and managers from HEI's in partner countries knowledge and skills in transversal topics of higher education, such as quality assurance practices, innovation and entrepreneurship, curricula development by competences and learning outcomes, and others following Bologna process standards
- To create interdisciplinary postgraduate programmes (courses and joint PhD programmes) that enhance the potential of GIT in different areas and degrees and focus research outputs on contemporary problems at regional and global scales
- To foster and strength the cooperation between university and industry in those topics identified as critical for the sustainable development of the partner countries.

In terms of participation and contribution to the following report, in green we can identify the partners that provided feedback, in orange the ones with delay and in red the ones that did not contribute to the quality control of the project.

INSTITUTION	COUNTRY	STATUS	RISK
UPV	Spain		
VUB	Belgium		
KTH	Sweden		
UOL	Slovenia		
YSU	Armenia		
ANAU	Armenia		
MOESCS	Armenia		
NUACA	Armenia		
CCRC	Armenia		
KSUCTA	Kyrgyzstan		
MOE	Kyrgyzstan		
KSMU	Kyrgyzstan		
OshTU	Kyrgyzstan		
GOScartography	Kyrgyzstan		

The Erasmus+ Programme

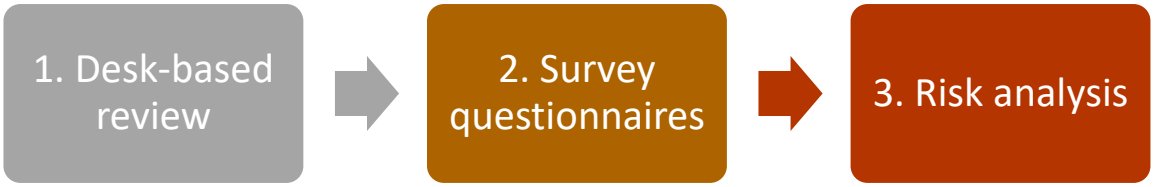
There is a grant agreement (contract) in place for the GEOTAK project between the Education, Audiovisual and Culture Executive Agency (Agency) under the European Commission (EC) for the Erasmus+: Higher Education – Universidad Politecnica de Valencia (UPV). Likewise, there is a partnership agreement established between UPV and all the project partners.

The full report provides a general introduction of the project aims, framework and work packages followed by specification of current status and progress of the project. Feedback from project partners and from the co-ordinator is presented with comments on the project strategy and on the sustainability of the GEOTAK project. The report concludes with recommendations for streamlining the project delivery.

1st Year Evaluation

Internal Evaluation Methodology

The evaluation was undertaken in three key stages:



In order to carry out the internal Evaluation, the internal Quality Committee has been given access to all relevant documents through MS Teams.

Participation in regular project management have been taking place. Therein, most all or most partners were participating. The meetings were duly organised by the Project co-ordinator and the Project Manager through the MS Tean online platform.

Survey responses are detailed at Section and individual partner responses are presented in the corresponding section (Project findings). A template of questions is provided in annex I.

Key factors affecting the project till date:

There are two key external issues impacting the project since the beginning and a third most recent one since February 2022:

- the Covid-19 pandemic which has impacted on planned physical partner meetings due to travel restrictions and on the progress of some project activities. Impacts from the pandemic are detailed in the report.
- Supply shortages is affecting the purchase and installation of equipment.
- The conflict between Russian and Ukraine can hinder to unknown limits the opportunities of organising physical meetings (e.g. close of Russian space and Russian airlines like Aeroflot) with possibilities of a regional scalation in Europe.

The impacts of these external influences are detailed in the risk assessment section.

Key Feedback from Partners

Reasons for becoming a partner in the GEOTAK project

The main reasons for partner participation indicate that the project's rationale and objectives align with the partners' organisational goals to support PhD education in their respective countries.

The Project Partnership

1.The majority of the partners consider that they share a common understanding of the project although the level of expertise is heterogeneous.

2. Feedback from Armenian and Kyrgyz partners was consistent in confirming that European partners and EU experts are cooperative and support in guiding work related to different work packages and in delivering workshops.
3. From survey feedback the project involved non-academic stakeholders specially for conducting the activities in WP1.1
4. There are some activities with important delays like the purchase of equipment.
5. Collaboration between European and third country partners is a good learning opportunity and could lead to future research and academic collaboration.
6. The project has not brought about substantial changes in personnel responsible in universities. Uniform teams are present in most cases since the beginning.
7. Most partners consider that members of the project consortium take responsibility for the project results and acknowledge areas for improvement.

Project progress

1. Most partners are satisfied with the project although there are some areas for improvement.
2. All but three of the project partners believe the current project activities are in line with the overall goals as set out at the start of the project.
3. Most partners feel the project deliverables will be achieved within time and budget provided F2F activities are reinitiated again.
4. Most partners feel that the project deliverables comply with overall objectives, specific work package objectives and for the activity described in the project. Unintended delays are caused due to the pandemic.

Project Management and Communication

1. The majority of the partners have indicated that the project co-ordinator inform all the partners clearly on aspects of project activity implementation, although some require more clarity, particularly in relation to financial aspects.

2. There is a general feeling that virtual meetings would not be fully effective specially when practical elements need to be taught. No trainings took place at the moment of elaborating the present report.

3. Meeting agendas and minutes are well prepared and circulated and overall the duration of meetings is sufficient.

4. All partners found project meetings useful in addressing project aspects, facilitating brainstorming and preparation for next steps in the project.

5. Most of the partners believe that current communication channels are sufficient to achieve the desired project results.

Unintended Outcomes

Although GEOTAK consortium members may feel that is early to realise unintended outcomes in the project, unintended outcome to date include:

1. Online events not planned in the original proposal but bringing added value to the project.

2. Local covid responses and bureaucracy puts unnecessary in jeopardy the purchase of equipment and equipment of Geo Information Systems (GIS) labs

3. Volatility in markets have provoked a devaluation in KGS (lost nearly 50% of value).

Added Value

Involvement as a partner in GEOTAK project has benefitted certain partner organizations by providing the necessary international exposure needed for the accreditation and for building their PhD programmes in GIS.
The project encourages Armenian and Kyrgyz partners to deliver new knowledge in Earth Observation techniques and use of Geo-Information Technologies (GIT)

Quality Assurance

Further training on Bologna process and industrial PhD concepts is necessary for third country HEIs. Being the first CBHE curriculum development project at PhD level for many partners, some concepts like learning outcomes, learning objectives and calculation of ECTS should have been clarified before starting the curriculum development phase.

The process to select an external evaluator should have started in 2021.

Risk assessment may be included as part of external quality monitoring and control as well.

Dissemination

Dissemination activities are being affected by being limited to online communication resulting from COVID 19.
Dissemination platforms like the project website and social media in Armenia have been developed at an early stage in the project. However, newsletters are not included in the website. We acknowledge that project newsletters are a good method for ensuring effective dissemination and they should be enhanced. In addition, there was little information to disseminate during the first half year of the project.

Social media has been developed for a broad audience in Armenia although more promotional campaign needs to be done, specially in Kyrgyzstan.

NUACA as WP Leader should keep a track on activities and statistics from all partners regarding dissemination events.

In addition to the dedicated dissemination team in the project, the individual HEIs should be encouraged to also disseminate the project in their university websites, local magazines and social media platforms through articles and other promotional events. Some of the events organised are related to the Erasmus+ program and not so much to the development of industrial PhDs or the creation of National Research Nodes (NRN) with GIT.

Summary of First Year Evaluation Conclusions – Key Achievements / Impacts

The project's rationale and objectives align with the partners' organisational goals to support the implementation of PhD programmes in GIS and Earth Observation. Overall, partners are motivated to be part of the GEOTAK project and consider that it brings significant benefits to their organisation, local scientific community and that the original aims and objectives of the projects are still valid, relevant and achievable.

Despite key external unforeseen impacts with the recurrent COVID 19 situation, at this stage of the project is progressing in line with key milestones. However, due to the impacts of COVID 19 there may be a delay in the progress with some project activities and in the achievement of targets and outcomes and the project may benefit from an extension, if appropriate.

Feedback indicates that the project provides an excellent opportunity for international collaboration and networking through a diverse team of European and third country partners and could create a basis for future international collaboration and research. European partners are cooperative and excellent in guiding work related to different work packages and in delivering workshops. The role and involvement of Ministries of Education has not been substantiated during the first year (2021).

The majority of the partners were satisfied with overall project progress and their individual progress with work packages and attributed any issues with delay due to the impacts of COVID 19.

Some partners perceive that others could be more motivated and active and that the size of the partnership can lead to a feeling of lack of cohesiveness. There are some issues with delays in purchase of equipment that may jeopardize the project.

Despite the intensive communication, discussions and one to one consultation for clarity and updates might be required. UPV as a coordinator is conducting one to one virtual meeting with all the partners. It would be encouraged that other partners would also do the same within the consortium.

Despite a slight delay in formulating a quality plan for the project and engaging an external evaluator which was attributed to the effects of Covid in university administrations, a GEOTAK Quality Control Plan is well developed. What is missing is the instrumentalization of the Plan through external evaluation report.

Dissemination the establishment of the project website https://geotak.webs.upv.es and social media in Armenia, visibility and impact could be further enhanced.

Active participation from all partners will be needed for effective dissemination.

First year report

This report is a first year evaluation of the GEOTAK project and will follow the format of a general introduction of the project aims, framework and work packages followed by specification of current status and progress of the project. Feedback from project partners and from the Co-ordinator is presented with comments on the risks and mitigation measures and on the sustainability of the GEOTAK project. The report concludes with recommendations for streamlining the project delivery in 2nd and 3rd year.

The project objectives are:
- To identify research and development needs of Kyrgyzstan and Armenia in the field of Geoinformation Technologies.
- To create a Research Node in GIT per partner country to promote and harmonise collaborative innovation projects and joint research lines.
- To create and/or update research laboratories of GIT.
- To provide teachers and managers from HEI's knowledge and skills in transversal topics of higher education, such as quality assurance practices, innovation and entrepreneurship, curricula development by competences and learning outcomes, and others following Bologna process standards.
- To train trainers from partner countries in relevant topics of GIT that have special interest for regional development of innovation and environmental protection.
- To create interdisciplinary postgraduate programmes (master and PhD levels) that enhance the potential of GIT in different areas and degrees and focus research outputs on contemporary problems at regional and global scales.
- To foster and strength the cooperation between university and industry in those topics identified as critical for the sustainable development of the partner countries.
- To exchange and share experiences and perspectives between two emerging countries from different geographic regions, Armenia and Kyrgyzstan, that are facing common socio-economic challenges and need to stimulate new strategies in research and development

The project aims to cover four important strands of modernization of HE, related to the priorities of both EHEA priorities and regional needs:

- **Curricular development in GIS at PhD level** based on Bologna system and use of learning outcomes through multidisciplinary fields of study, all priority areas in the Caucasus and Central Asia regions.
- **Bridge between HEI and external stakeholders** promoting research and innovation through newly established GEOTAK NRN-GITs.
- Development of **new teaching and learning methodologies** and support tools, including ICT-based practices as a mean of sustainability of the project.
- Role of **Universities as facilitators** of "innovation"

Project Findings

Activities

Despite the Pandemic the consortium has been following closely the workplan. An initial needs assessment report was conducted during 2021 with involvement of all partners. Based on the results produced in WP1.1 partners were able to analyse the needs in terms of research and innovation in Armenia and Kyrgyzstan.

The survey and report with recommendation for Implementation of GEOTAK Curriculum Package are available in MS Teams. Only one workshop for WP1 was organised by ANAU.

For WP2 and WP3 curriculum development, the training of trainers was to be conducted face-to-face, but they were postponed for 2022. The first physical training will take place in March 21st in Osh-Bishkek. The planned agenda includes visits to different partner institutions in Kyrgyzstan. The current crisis situation made these trips very risky and not recommended for certain countries and people. Therefore, the consortium decided to postpone the visits and replace them by online sessions. A 2-day online pre-course training took place at the beginning of February 2022. During this first course, there were more than 100 attendees where they learned the basics of remote sensing, had an introduction to the Copernicus project and went deeper into the use of LiDAR and hyperspectral sensors. In a second online training, one week after the first one, participants were able to learn about geodetic reference systems, land surveying and GNSS, and the basics and use of UAV photogrammetry.

There was an early start in the organization of the PhD courses, as partners were waiting to start other activities. A good practice observed is that the curriculum of the PhD Programs in "Applied Geology" and "Mining". As a result, Ministry of education and science of the Kyrgyz Republic approved PhD licensing for KSMU.

In relation to WP5 and project management, the Covid situation has caused many people be absent and unable to complete their duties. This has rendered in turned the process of organisation and participation more difficult.

For WP6, there is little information provided in the website. There are five events that have been reported:
NUACA organized an Erasmus+ Projects Information Day
Online pre-course training on Basic concepts in Geoinformation Technologies" & "LAND – GIT in Land management, Land use / Land cover mapping, marginal landsMonitoring visit of the National Erasmus+ Office in Kyrgyzstan
National Kick-Off Meeting in Kyrgyzstan
National Kick-Off Meeting in Armenia

The following trainings have been conducted out of the frame of GEOTAK.

Topic	Responsible
A training course on "Opportunities for Land Monitoring and Real Estate Cadaster Implementation by GIS Systems" was organized	ANAU

Extracurricular open class "Practical application of modern digital surveying tools" carried out at the ANAU Water and Soil Management Technology Research Center with MES of RA.	ANAU
"Geocommunication Support System (CCS) Training in Use of Geographic Information Systems (ArcGIS)" In frame of (GATO) Program "Use of Advanced Scientific Technologies" Partnership for Integrated Resource Conservation	ANAU
On-line seminar-discussion "Dijital platforms in agriculture'' Russia, "Uyar Agricultural College"	ANAU
Seminar- discussion- exhibition. Agricultural drone test and work demonstration. Green Trail NGO Green Training Center	ANAU
Seminar-discussion "Coastal Monitoring of the Environment through the Copernicus System" in frame of (PONTOS) Project.	ANAU
Online capacity building training in the framework of Erasmus+ “Introducing work-based learning in higher education systems of Armenia and Moldova for better employability of graduates” (WBL4JOB) project	ANAU
On-line seminar-discussion "Introduction of Smart Agriculture project, Preliminary presentation of Smart Agriculture platform"	ANAU

Given the lack of F2F interaction, trainings have been conducted virtually but by common consensus partner recognise that this is not an ideal situation, particularly regarding the training for trainers where the focus is on teaching and learning methods which needs a more practical orientation. According to some of the coordinators, there has been no dissemination or mobility activities after the workshops. The possibility to deepen the content of certain topics has been limited and therefore the interest to know more about the topics covered by the project would wane after the virtual sessions. At present time, we don’t have enough data to gauge the impact and effectiveness of the trainings.

Although some PhD programs have been approved for accreditation, course descriptors need to be presented to WP2 and WP3 leaders (KTH and UL respectively). No feedback has been provided at the time of the elaboration of the present report. A good exercise herein would be to compare national qualification frameworks in Europe and beneficiary third countries. It would be advisable that a workshop on defining learning outcomes at PhD level is organised by one of the European partners. We are aware that the leaders for WP2 have been working in a coordinated way and with conversations on how to approach and improve the curriculum development process. However, the materials produced are at an early stage. As final tangible result, we would expect each of the delivered modules in a format that it compatible with the ECTS user’s guideline. This can be obtained in the following site of the European Commission.

https://op.europa.eu/en/publication-detail/-/publication/9ac30b32-f6af-486e-ba4b-891459942bfd/language-en

WP3 is at an early stage of implementation. This WP should be a priority for the first half of 2022.

Quality and monitoring control

A quality plan has been prepared by VUB and revised by UPV during 2021. Although the quality plan presents clear indicators, there has no been follow-up by an external evaluator. The quality plan includes a risk assessment tool where to monitor and assess the risks that appear or evolve during the project. Nevertheless, a risk assessment may also be conducted externally. Given the lack of training activities during 2021, instead of two internal reports an internal report for the first year has been elaborated hereby.

Dissemination and communication

In WP6, a project website was established by the coordinator UPV and managed by NUACA as WP Leader. Visibility of the project is good with a good number of activities organised to promote the project. Communication is good both internally and externally, mainly because of the interest and willingness of all parties. Due to the fact that English is not the main language among many of the participants and the cultural differences in the way of working, sometimes there is not a clear understanding of what partners agree to do. That slows down the decision-making process.
Although there is a dissemination plan in place developed by Edulab, no newsletters are presented as indicated in the proposal. Due to the pandemic, activities with physical presence have been reduced to a minimum. It is important that dissemination events take place nationally. In second and third year it is expected that "GEOTAK" days are organized more intensively. Additionally, from year 2 the partners should start a recruiting campaign for enrolment in new/updated courses with corresponding marketing materials (In green those activities completed)

Content	**Responsible**	**Status**
Social media	NUACA	Functional for Armenia
Website	NUACA	Functional
Newsletter		
International – dissemination Year 3	YSU	
Local meetings and workshops to attract social stakeholders	All AM and KG academic partners	
- Meetings of project Advisory Board and Administration	NUACA, KSUCTA	
- Contacts with social stakeholders related to GIT	All AM and KG partners	

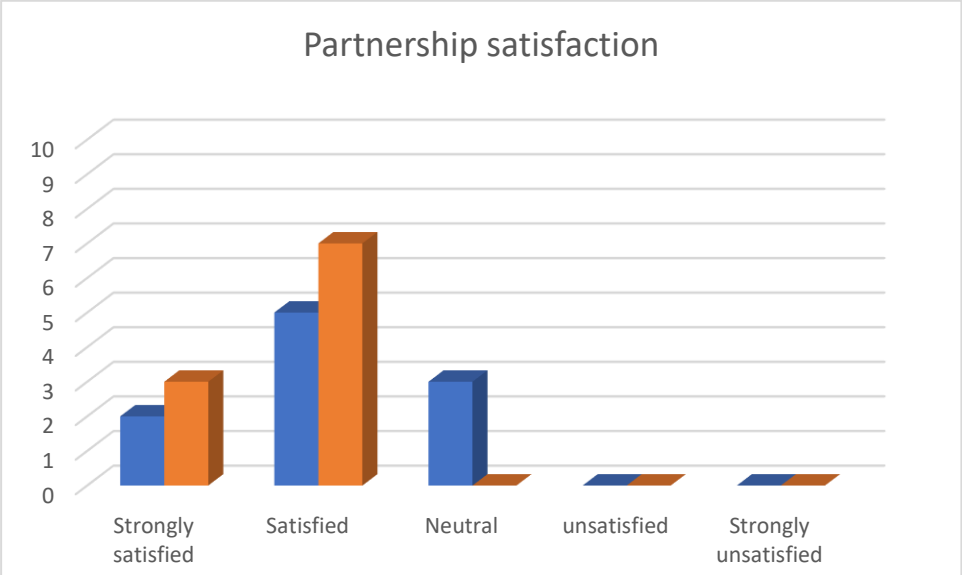
Coordination and management

The partnership is satisfied with the coordinating institution, trying to meet the deadlines and to remind the different members of the pending things they need to do, as well as favouring a climate of cooperation in which things are clear. Partners believe that the project steering committee meets sufficiently so as to ensure that the processes and steps to be followed are in line with the overall project.

The WP leaders are trying to do an adequate job taking responsibility for their part and trying to meet deadlines in a timely manner although covid has posed several challenges in WP implementation.

Not all partner members have participated equally in the activities defining each WP (e.g. OshTU in WP4). Partner members are more inclined to collaborate in the activities that are suggested to them lacking sometimes a sense of ownership - although we acknowledge that responsible people are overloaded with other regular academic tasks.

In general, when asking the partners to what extent they were satisfied with the results of WPs and participation in project activities the answer was overall positive. Probably better results can be obtained once there is again participation with physical presence where partners can share knowledge and experiences together (see graph below for results).



Cost effectiveness

At this stage it is believed that the project is being cost effective because partners have to get adapted to the current situation without making trips or face-to-face activities and thus most activities have been conducted online. Some of the negative impacts are addressed in the risk analysis section. These adaptations may have greater influence on the next steps of the project if no mitigation measures are put in place. For example, there has been substantial delayed in the purchase of equipment while local currencies have been devalued considerably. That represents an important loss of money if euros were converted into local currency at the beginning of the project. Prices in equipment has also increased during the last year due to shortages problems.

Engagement with other stakeholders

More than 70 external stakeholders have been participating in the initial needs survey. Non-academic partners like CRC and Goscartography have been interacting with other non-academic stakeholders to strengthen the project. This was done within the framework of WP1. The idea is that these very same people will support the academic partners in the development of the NRN-GIT during and after the end of the project.

Sustainability

In order to sustain the project in the second half of the project and beyond, we believe that the collaboration between EU and AM-KG partners must be ensured. The role of the Ministries of Education is also crucial. Although the pandemic has a limiting effect and prevented the partners from meeting there is a good level of understanding. Nevertheless, the lack of personal contacts has hindered a closer relationship and therefore the fluidity in communication. It has also been observed a language barrier and the cultural differences have made it difficult to build a close relationship between the members, which contributes to the fact that partners do not understand fully what the other expects and prioritizes respect for the other rather than deepening teamwork. It is believed that given the current circumstances to which they need to adapt, the collaboration work is still adequate. Partners believe that sustainability will be achieved once they can travel again and get to know each other.

Additionally, there seems to be a strong commitment from partner members although the EACEA rules and the currency exchange loses may have a negative impact on the motivation of participation in the project.

The project managers are confident that the PhD courses developed and the GEOTAK NRN-GIT would help in the sustainability of the project.

In the second year of the project, more attention should be given to the organisation of all expected training sessions and other workshops not conducted during 2021.

The project partners unanimously believe that the project should be extended after the end of the project. However it is not clear that the sustainability measures of the project have been well defined in that case.

SWOT Analysis

As result of the information obtained from interviews and questionnaires during the final evaluation, the following SWOT analysis has been elaborated.

INTERNAL FACTORS	
WEAKNESSES	STRENGTHS
IDENTITY AND COMMUNICATION	
1. Project not visible in many local websites 2.Although a major effort has been placed to guarantee a good communication process, the	1. Strong experience of EU institutions in GIS/RS 2. Intercultural, academic and technical exchange gain within the consortium

fact the project is being developed entirely in a virtual mode, during a pandemic that has affected in different periods different partners (institutions and GEOTAK team members) has resulted in a challenge to keep a good and smooth communication and, at some extension. 3. Good communication is dependent on personal understanding that became more difficult to assimilate only based on virtual meetings. There are several people from consortium that don't know each other.	3. The strength of the project so far is the strong motivation by academic partners.
KNOWLEDGE TRANSFER	
1. The weaknesses of the project so far are the fact that partners have not been able to meet in person. 2. Some partners like KSUCTA and KSMU have satisfied all requirements for their PhD Programs and waiting for the State licenses to start PhD student intake in 2022. 3. Workshops and trainings not conducted yet.	1. Partner countries eager to develop the mechanisms and conditions for development of curriculum at PhD level with support of government authorities. 2. Some partners like KSUCTA and KSMU have satisfied all requirements for their PhD Programs and waiting for the State licenses to start PhD student intake in 2022. 3. An environment has been created to explore new opportunities to strengthen the professional capacity of the parties.
COOPERATION	
1. Not everybody has been actively involved in promoting quality and cooperation 2. Limited internal resources to support parallel activities (e.g. academic, professional exchanges) 3. Cooperation limited to remote communication and collaboration due to pandemic situation.	1. Good example of cooperation between coordinator and partners to get activities done. 2. Contacts and cooperation have given a wider opportunity for deeper and comprehensive acquaintance with the professional, research-educational activities of the collaborating parties.
ORGANIZATION, HR and MANAGEMENT	
1. Some groups like female staff and student representation should have more visibility and should be more involved in some of the project activities organized. 2. Tendering procedures are taking too long in some cases 3. Lack of familiarity by some partners concerning the use of the grant 4. External advisory board not operational yet	1. Institutional support at partner universities 2. Appreciation of good work done by EU partners 3. Share decision making process within consortium.

EXTERNAL FACTORS	
THREATS	OPPORTUNITIES
GENERAL ENVIRONMENT	
Conflict Russia-Ukraine could stop further mobilities between partners. Conflict in Ukraine could escalate to Europe. Fluctuation in exchange rates may impact negatively the purchase of equipment	Relaxation of measures related to Covid 19
KNOWLEDGE TRANSFER	
1. Not many specialists in GIS/RS to transfer knowledge in beneficiary countries. 2. Available technical infrastructures not always ideal to conduct online trainings.	1. Interest from other HEIs to benefit from results of GEOTAK project 2. New regulations and laws supporting PhD structure in beneficiary countries. 3. Increasing importance of PhD education in educational process in Armenia and Kyrgyzstan.
COOPERATION	
1. Lack of financial and Human Resources available. 2. Low involvement of private stakeholders 3. Lack of public-private funds to increase international cooperation.	1. Closer cooperation EU-AM-KG 2. Interest by EU in progress of EHEA model of education in countries like AM and KG. 3. Signature of agreements between partners as synergy with other actions and programs.
ORGANIZATION, HR and MANAGEMENT	
1. Not enough spending of grant which may delay future EACEA instalments and transfers to partners 2. External risks not considered in contingency plans by AM-KG partners. 3. Need of more investment to support language skills where language barriers with academic staff may appear.	1. Visibility of website accessible to all partner countries. 2. Experience of EU partners useful in conflict resolution processes. 3. Low turnover in the core team

Risk Assessment

In any project, a good practice is to describe the critical risks, uncertainties or difficulties related to the implementation of it, and the measures/strategy of the coordinator/consortium for addressing them.

Risk analysis and assessments should indicate for each risk identified the impact and the likelihood that the risk will materialise (high, medium, low), even after taking account the mitigating measures.

A risk register has been set-up in excel format aiming at identifying the project risks and at supporting the implementation of a risk mitigation strategy.

As part of the regular internal evaluation of project monitoring, which is organized in the frame of WP4, all coordinators were requested to participate in detecting and classifying risks, in particular for the package/task they are responsible for. All identified risks have to be assessed on a yearly basis. If new risks are identified, the risk register would have to be updated.

The risk register will be reviewed by the project coordinator and the Project Management Board. This work is done by classifying each risk according to a series of variables, assigning values to be selected from predefined lists, shown in table below.

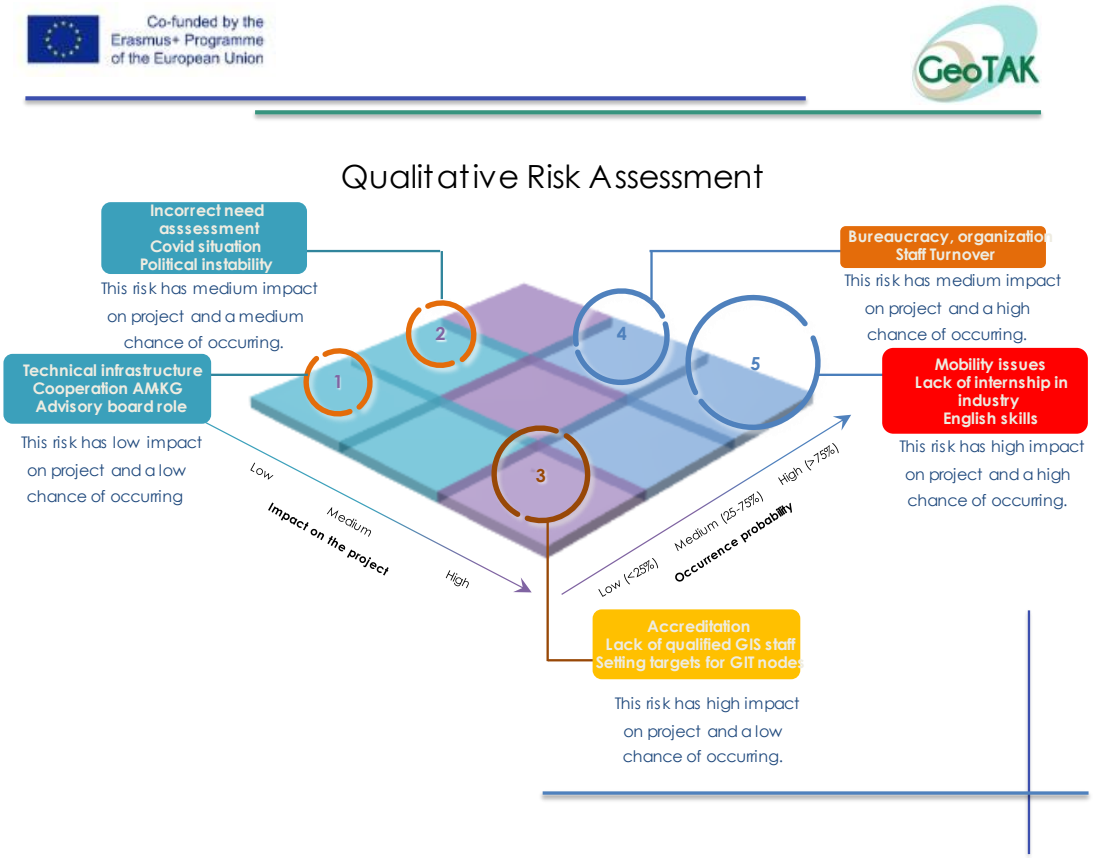
Risk variables and associated predefined values

Risk variable	Associated predefined values
Risk type	• Financial • Management • Technical • Operational
Risk status	• None (not yet occurred) • Identified (occurred, but yet abandoned) • Closed (abandoned)
Probability of occurrence	• Low (occurrence is unlikely) • Moderate (occurrence is possible) • High (occurrence is likely) • Extreme (occurrence is very likely)
Expected impact	• Low (only minor influence on deliverables and time plan) • Moderate (deliverables might not be provided on time and / or in the envisaged quality) • High (certain activities and tasks might jeopardize the success of a given WP) • Extreme (overall project success is endangered)

Impact description				Risk Matrix			
Reputation Operations, Compliance H&S	> USD XXX (15% of XXX)	Critical	4	MODERATE	HIGH	EXTREME	EXTREME
	USD XXX– XXX (5% - 15% of XXX)	Major	3	LOW	MODERATE	HIGH	EXTREME
	USD XXX– XXX (1% - 5% of XXX)	Moderate	2	LOW	LOW	MODERATE	HIGH
	< USD XXX (1% of XXX)	Minor	1	LOW	LOW	LOW	MODERATE
if more relevant Other Impact Criteria	if applicable Financial impact	Likelihood Description (horizon end of 2016)		1	2	3	4
				Unlikely (<10%)	Possible (10% - 50%)	Likely (50% - 90%)	Almost Certain (> 90%)
				The event could occur in unusual circumstances.	The event might occur at some point.	The event will probably occur.	The event is unavoidable or nearly unavoidable.

		Critical risks and risk management strategy ***Note:*** *Uncertainties and unexpected events occur in all organisations, even if very well-run. The risk analysis helps the project to predict issues that could delay or hinder project activities. A good risk management strategy is essential for good project management.*		
Risk No	Description	Work package No	Type of Risk and level	Proposed risk-mitigation measures
1	**Covid doesn´t allow people to travel. In a reviewed version Conflict Russia-Ukraine also may affect the possibility of organising F2F meetings.**	**WP 2-3-5-6**	**Management**	**Share experience with other projects where F2F are already taking place**
2	**Survey and reports in WP1 with low participation and offering non-representative data**	**WP1**	**Technical**	**Intensive communication campaign. Peer reviewed analysis verified by non-academic stakeholders**
3	**Low participation in ToT**	**WP3**	**Technical**	**Define reward schemes. Intensive internal communication to motivate staff to participate. Issue of certificates**
4	**Delay in purchase of equipment**	**WP2**	**Operational**	**Tender processes as soon as possible and notification to EACEA or unavoidable delays. Seek alternatives like purchases through European partners whenever possible**
5	**Lack of commitment from partners into quality WP**	**WP4**	**Management**	**To promote F2F activities to enhance the "ownership" of the project by the teams involved.**
6	**Dissemination plan for the stakeholders not attractive enough**	**WP5**	**Management**	**Increase communication with key stakeholders specially within non-academic world.**
7	**Low Impact of GEOTAK research nodes**	**WP5**	**Technical**	**Involvement of skilled PRs and influencers within scientific community appointed in AM and KG**
8	**Bureaucracy**	**WP6**	**Operational**	**Involvement of educational leadership and dialogue with administration to facilitate project implementation within each institution**
9	**Lack of understanding of financial and administrative EACEA rules**	**WP6**	**Financial**	**Preparation of guidelines and handbook for good use of the grant. Hands-on trainings. One to one coaching sessions when necessary.**
10	**Exchange rate losses**	**WP6**	**Financial**	**Calculation of potential losses and development of mechanisms to compensate for the loss**

A summary of risks as identified by the GEOTAK consortium during 2021 is illustrated below.



Conclusions and Recommendations

There is a considerable endeavour by the coordinator at UPV to organise regular monthly meetings so that partners are constantly involved in the development of GEOTAK. This is considered a good practice.

After looking at the project implementation summarized in the project dashboard below, we noted that the following deliverables are still pending or with substantial delay.

WP1.2 - Workshop on R&D in Kyrgyzstan

WP2.2 – Although External Advisory Boards have been created no formal meetings with them have taken place insofar.

WP3 - At least two trainings on GIS should have been organised by the end of 2021. Likewise a transversal training in HE should be organised beginning of 2022. Purchase of equipment for GIS labs has been substantially delayed because of Covid and bureaucratic procedures (specially in Kyrgyzstan).

WP4.3- External evaluator is not available yet at this stage despite the quality plan is adequate and indicators addressed.

WP6.1 Social media is not thoroughly developed or exploted in Kyrgyzstan. Since there was a delay in the beginning of some key activities not much external communication has been produced in general. Academic partners are trying to promote the National Node for Research on Geoinformation Technologies but not many activities have taken place yet in this direction.

Task	WP Lead	Progress	Due date	Total
WP1 - Social Needs				
1,1	KSUCTA	80%	M6 Y1	65%
1,2		50%	M6 Y1	
WP2 - Development of Research Networks				
2,1	KTH	100%	M12 Y1	50%
2,2		100%	M18 Y2	
2,3		0%	M20 Y2	
2,4		0%	M30 Y3	
WP3 - Development of Research Capacities				
3,1	UL	50%	M9 Y1	15%
3,2		0%	M12 Y1	
3,3		0%	M26 Y3	
3,4		0%	M25 Y3	
3,5		40%	M26 Y3	
3,6		0%	M33 Y3	

Task	WP Lead	Progress	Due date	Total
WP4 - Quality Assurance				
4,1	VUB	100%	M6 Y1	44%
4,2		33%	M36 Y3	
4,3		0%	M36 Y3	
WP5 - Project Management				
5,1	UPV	100%	M2 Y1	50%
5,2		33%	M36 Y3	
5,3		33%	M36 Y3	
5,4		33%	M36 Y3	
WP6 - Dissemination and Exploitation				
6,1	NUACA	50%	M4 Y1	21%
6,2		33%	M36 Y3	
6,3		0%	M36 Y3	
6,4		0%	M36 Y3	

Key

	Monitoring activities have revealed severe impact to either the relevance to the aim of the WP, the completion of the related indicators in a timely manner, or the completion to budget. Further comments to be provided.

	Monitoring activities have revealed significant impact to either the relevance to the aim of the WP, the completion of the related indicators in a timely manner, or the completion to budget. Further comments to be provided.
	All activities undertaken are relevant to the aim of the WP, the related indicators have been completed in a timely manner and are progressing to specified budget.

We would like to add some final recommendations. For the next stages, as partners will be becoming more familiar with each other and Covid rules are getting relaxed, more intensive activities F2F should be organised from March 2022 onwards..

The relationship between members is fundamental for a fluid communication and an effective understanding of the expectations of the other parties, we believe that face-to-face meetings will help this improvement, and if this cannot happen, it is believed that online meetings between smaller groups could facilitate a closer knowledge between members. An adequate strategy for not big consortia it's to design a coaching approach where each EU partner could also monitor each country (two in the GEOTAK project). There are also functions that were not assigned to specific people at the beginning. This is logical because they are processes that had to be developed. The responsibility of the members and the productivity of some of them has made them assume functions in a natural way displaying a sense of ownership. When some partners are not performing, it would be useful to discuss in group and reach consensus and when necessary to look for solutions (e.g. those not contributing to WP4).

The logos and visibility of the project should appear in all documentation. It would be convenient distinguish the level of privacy in each of the documentation – whether this is public or private.

A risk assessment and analysis is necessary in any project implementation. It is very important that after each training there is a follow up and a questionnaire. Regular internal quality surveys and reports will contribute to improve the quality of the project and facilitate the achievement of its objectives.

As regards the management and coordination, it would be advisable to conduct specific trainings in the financial management of the project, the financial reporting and how to complete the intermediate report in year 2.

Given the circumstances, the project is considered to progress adequately although it needs to keep under supervision a number of issues and risks as indicated above that could jeopardize the success of the project. Equipment should be purchased in year 2; curriculum should be finalised before September 2022 and contingency plans should be discussed related to the potential exchange rate loss due to the current economic crisis in many countries (i.e. hyperinflation, shortages, capital flows).

ANNEX I.

Name of the institution:	
Main coordinator: **Number of team members:**	
Main activities during the reporting period	
Describe deviations from the original work plan (and their justification) ***Explain the reasons***	
Were there any delays or unfulfilled activities	
Is there a clear connection between project activities and WPs	
In general, to what extent are you satisfied or dissatisfied with the results of WPs (tick what corresponds)	
Strongly dissatisfied	
Dissatisfied	
Neutral	
Satisfied	
Strongly satisfied	
What events have been held at your institution?	

Were interesting and fruitful the training courses on GIS?
Were the trainings' format effective?
Were there internal dissemination activities after the workshops / mobilities ***How many people attended*** ***What was the impact***
What materials have been developed during the reporting period **Have they been peer reviewed** **What are the results of the peer reviewing (materials improved/written up)**
Has your institution been periodically and adequately informed of the project developments? **How was it done**

Express your views on the communication process
Have the tasks undertaken by the coordinator/WP leaders been implemented successfully? **a) the coordinating institution** **b) the Project Management Board** **c) the workpackage leaders** **d) the other partners**
a) b) c) d)
Cost effectiveness of the project activities
To what extent are you satisfied with participation in the project activities (tick what corresponds)

Strongly dissatisfied	
Dissatisfied	
Neutral	
Satisfied	
Strongly satisfied	

Were non-academic stakeholders involved into the project activities **If yes, specify how**

Did your HEI disseminate the obtained results/outcomes among other HEI
Have all project partners contributed to the WPs activities? **If yes, specify. If not, why?**
Was the cooperation between project partners effective? Please specify.
What are the strengths of the project until now?
What are the weaknesses of the project until now?
What are the areas for improvement? Please elaborate